WHAT IS CLAIMED IS:

1. A scan type exposure apparatus, wherein a pattern is transferred sequentially to different regions of a substrate through a step-and-scan operation including a combination of stepwise motion of the substrate to an original and scanning exposure, moving the original and the substrate in a Y direction, said apparatus comprising:

a stage for carrying a substrate thereon and being movable in the Y direction and an X direction orthogonal thereto;

first measuring means for measuring yawing of said stage by using a first reflection surface along the Y direction of a mirror mounted on said stage; and

second measuring means for measuring yawing of said stage by using a second reflection surface along the X direction of a mirror mounted on said stage.

2. An apparatus according to Claim 1, further comprising an alignment scope for performing off-axis alignment measurement to the substrate.

3. An apparatus according to Claim 2, wherein a measurement position of said alignment scope upon said stage is placed in the Y direction as viewed from an optical axis of said projection optical system.

4. An apparatus according to Claim 2, wherein a measurement position of said alignment scope upon said stage is placed in the Y direction as viewed from an optical axis of said projection optical system.

5. An apparatus according to Claim 1, further comprising control means for servo controlling motion of said stage on the basis of yawing measurement by one of said first and second measuring means.

6. An apparatus according to Claim 1, wherein said first and second measuring means include laser interferometers for projecting laser beams to the same reflection surface and for performing interference measurement based on reflected laser beams.

7. An apparatus according to Claim 1, wherein said first measuring means includes an X yawing measurement interferometer for performing yawing measurement to said stage in cooperation with an X-direction laser interferometer for measuring the stage position with respect to the X direction, and wherein said second measuring means includes a Y yawing measurement interferometer for performing yawing measurement to said stage in cooperation with a Y-direction laser interferometer for measuring the stage

position with respect to the Y direction.

8. An apparatus according to Claim 7, wherein, for scanning exposure, the position measurement to the stage is performed by use of the Y-direction laser interferometer, the Y yawing measurement interferometer, and the X-direction laser interferometer.

9. An apparatus according to Claim 1, further comprising selecting means for selective use of said first and second measuring means in accordance with the state of operation of said exposure apparatus.

10. An apparatus according to Claim 9, wherein said selecting means includes one of (i) first means effective to select one of the first and second measuring means to perform the measurement in accordance with the state of operation of said exposure apparatus, and (ii) second means operable to cause one of the measurement data of said first measuring means and the measurement data of said second measuring means effective.

11. An apparatus according to Claim 9, wherein said selecting means includes processing means for performing one of averaging processing and statistical

processing to the measurement data of said first and second measuring means in accordance with the state of operation of said exposure apparatus.

12. An apparatus according to Claim 1, wherein, for scanning exposure, the yawing measurement is performed by use of said second measuring means.

13. An apparatus according to Claim 12, wherein, for movement after the measurement with said alignment scope, the yawing measurement is performed by use of said first measuring means.

14. An apparatus according to Claim 1, wherein, for movement after the measurement with said alignment scope, the yawing measurement is performed by use of the measuring means which is related to a direction orthogonal to the movement direction.

15. A scanning exposure method, comprising the steps of:

preparing an original and a substrate;

measuring a position of the substrate by use of an alignment scope and, after the measurement, moving the substrate; and

sequentially transferring a pattern of the original to different regions on the substrate in

accordance with a step-and-scan operation including a combination of stepwise motion of the substrate relative to the original and scanning exposure while moving the original and the substrate;

wherein, between the scanning exposure and the movement after measurement by the alignment scope, a measurement direction with respect to which yawing measurement to a stage using a laser interferometer is made different.

16. A method according to Claim 15, wherein, for the scanning exposure, the stage yawing measurement is performed by projecting laser beams in a direction the same as the scanning movement direction.

17. A method according to Claim 16, wherein, for movement after the measurement by the alignment scope, the stage yawing measurement is performed by projecting laser beams in a direction orthogonal to the movement direction.

18. A scanning exposure method, comprising the steps of:

preparing an original and a substrate;

measuring a position of the substrate by use of an alignment scope and, after the measurement, moving the substrate; and

sequentially transferring a pattern of the original to different regions on the substrate in accordance with a step-and-scan operation including a combination of stepwise motion of the substrate relative to the original and scanning exposure while moving the original and the substrate;

wherein, for the scanning exposure, yawing measurement to a stage is performed by using a laser interferometer and in relation to a direction the same as the scanning movement direction, and wherein, for the movement after measurement by the alignment scope, yawing measurement to the stage is performed by using a laser interferometer and in relation to a direction orthogonal to the movement direction.

19. A device manufacturing method, for producing a device through a process based on a method as recited in any one of Claims 15 - 18.

20. A method according to Claim 19, further comprising applying a resist to a substrate before exposure thereof, and developing the resist after the exposure.

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